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10/651,691	08/29/2003	Satoshi Hada	IBM.03.55.US	9214

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EXAMINER	
GORTAYO, DANGELINO N	
ART UNIT	**PAPER NUMBER**
2168	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/651,691	HADA ET AL.	
	Examiner	Art Unit	
	Dangelino N. Gortayo	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-37 are pending.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 8/29/2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

3. Claims 1, 11, 21, 30, 33, 36, and 37 are objected to because of the following informalities:

a. Claims 1, 21, 30, and 36 recite the limitation "providing path-level access control to a structured document" starting in line 1, which states the "intended use" of the database system. Function(s) following the term "for" indicate "system ability" and/or "intended use" and do(es) not hold patentable weight.

b. Claims 11, 33, and 37 recite the limitation "providing path-level access control to a structured document" starting in line 1, which states the "intended use" of the database system. Function(s) following the term "for" indicate "system ability" and/or "intended use" and do(es) not hold patentable weight.

Appropriate correction is required.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP j 608.01(0). Correction of the following is required: claims 11, 33, and 37 recite the limitation "computer readable medium containing programming instructions". There is insufficient antecedent basis for this claim. The specification does not teach any definition of "computer readable medium" or "media" in general. Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 11-29, 33-35, and 37 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 11-20 are directed to "a computer readable medium containing programming instructions for providing path-level access control", and lacks hardware component to enable the function to be realized. The claim is embodied in software per se, and is non-statutory. Claims 33-35 and 37 are also directed to "a computer readable medium" and contain the same limitation, and are similarly rejected.

Independent claim 20 is directed to "a system for providing path level access control" and the limitation "a database management system in a computer system". The claim is read to indicate that the database management system is software per se, being executed on a system, with not hardware components for the function to be realized, and is non-statutory. Dependent claims 22-29 are directed to the "a system for providing path level access controls", lacking any hardware components, and are similarly rejected.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Damiani et al. ("A Fine Grained Access Control System for XML Documents", Published May 2002 in "ACM Transactions on Information and System Security", Vol. 5, No. 2, Pages 169-202).

As per claim 1, Damiani teaches "A method for providing path-level access control to a structured document in a collection stored in a database, wherein the structured document comprises a plurality of nodes," (see Introduction, pg. 171) "a) providing an access control policy for the collection, wherein the access control policy

comprises a plurality of access control rules;" (pg. 183, section 5.1 "Basic Features of the Access Authorizations", wherein access authorization rules determine whether a user has access to objects) "b) generating a path for each node of the plurality of nodes in the document;" (pg. 174, Example 2.1 and Figure 1(a), wherein the DTD of an XML document shows path information) "and c) generating for each path associated with a node a corresponding value expression based on at least one access control rule of the plurality of access control rules, wherein the corresponding value expression is utilized during access control evaluation to determine whether a user is allowed to access a node in the structured document." (pg. 186, Section 5.2 "Access Authorization" and Figure 5, wherein access authorizations express the requirement of access for each path of the object)

As per claim 2, Damiani teaches "the value expression is an executable statement indicating who is granted or denied access to the corresponding path associated with the node." (pg. 186, Example 5.1 and Figure 5, wherein the "Sign" column indicates the subjects who are granted or denied access to each path expression associated with an object)

As per claim 3, Damiani teaches "(d) storing each path and the corresponding value expression in a table." (pg. 186, Figure 5, wherein the access authorizations are kept in a table)

As per claim 4, Damiani teaches "(e) compiling each value expression prior to storing step (d)" (pg. 186, Example 5.1, wherein each access authorization is compiled and collected prior to placement in the table)

As per claim 5, Damiani teaches "(f) receiving a query from a user, wherein the query requests access to a node in the document;" (pg. 192, Example 6.1 lines 1-4, wherein a query from a user is received) "(g) executing the query;" (pg. 192, Example 6.1 lines 6-8, wherein the query is executed) "(h) evaluating the value expression corresponding to the path associated with the requested node;" (pg. 187, section 6.1 "Document Tree Labeling" and Figure 8, wherein the requested object's access authorization is examined and evaluated compared to the user id) "(i) displaying data associated with the requested node if the value expression grants access to the user;" (pg. 192, Example 6.1 lines 14-21 and Figure 9(a) and 9(b), wherein the data is displayed showing accessible objects) "and (j) hiding data associated with the requested node if the value expression denies access to the user." (pg. 192, Example 6.1 lines 14-21 and Figure 9(a) and 9(b), wherein the data is displayed hiding denied objects)

As per claim 6, Damiani teaches "the evaluating step (h) is performed during a run time." (pg. 188, section 6.1"Document Tree Labeling", wherein the authorizations' behavior varies from different requesters at runtime)

As per claim 7, Damiani teaches "wherein generating step (c) further comprises: (c1) normalizing each of the access control rules into a format comprising a head, a path and a condition, wherein the condition indicates who is granted or denied access to the path and under what circumstances;" (pg. 186, Example 5.1 and Figure 5, wherein the access authorization includes a subject, a path expression and a sign that indicated the condition) "(c2) propagating each of the plurality of access control rules through

each path such that access to each path is defined by at least one access control rule;" (pg. 183, section 5.1 "Basic Features of the Access Authorizations" paragraph 2, wherein the authorizations can be recursive, propagating through the paths) "and (c3) transforming each of the at least one access control rules affecting each path into a statement indicating who is granted and denied access to the path. (pg. 183, section 5.1 "Basic Features of the Access Authorizations" paragraph 3, wherein the authorizations are indicative of who is granted or denied access, including groups)

As per claim 8, Damiani teaches "(e) replacing the value expression for a path associated with a node with a reference notation if the value expression is identical to that for a path associated with the node's parent, thereby eliminating repeated value expressions in the table." (pg. 183, section 5.1 "Basic Features of the Access Authorizations" paragraph 2 lines 9-13, wherein recursive propagation of the authorizations applies to all descendant objects until overridden by a conflicting sign)

As per claim 9, Damiani teaches "the providing step (a) comprises: (a1) writing the plurality of access control rules; and (a2) validating the plurality of access control rules such that the resulting rules are syntactically and logically valid." (pg. 180, section 4 "Authorization Objects", wherein the authorizations are written and validated)

As per claim 10, Damiani teaches "the structured document is written in Extensible Markup Language. (pg. 176 paragraph 2 and Figures 1-2, wherein documents are in XML format)

As per claim 11, Damiani teaches "A computer readable medium containing programming instructions for providing path-level access control to a structured document in a collection stored in a database, wherein the structured document comprises a plurality of nodes," (see Introduction, pg. 171). For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 1 above.

As per claims 12-20, these claims teach the limitations covering the same grounds as rejected claims 2-10, as discussed above, and are similarly rejected.

As per claim 21, Damiani teaches "A system for providing path-level access control to a structured document in a collection stored in a database, wherein the structured document comprises a plurality of nodes," (see Introduction, pg. 171) "a database management system in a computer system;" (pg. 199, section 8.3 "The Java Implementation") "an access control policy for the collection, wherein the access control policy comprises a plurality of access control rules;" (pg. 183, section 5.1 "Basic Features of the Access Authorizations", wherein access authorization rules determine whether a user has access to objects) "and an Access Control mechanism in the database management system for generating a path for each node of the plurality of nodes in the document," (pg. 174, Example 2.1 and Figure 1(a), wherein the DTD of an XML document shows path information) "and for generating for each path associated with a node a corresponding value expression based on at least one access control rule of the plurality of access control rules, wherein the database management system

utilizes the corresponding value expression during access control evaluation to determine whether a user is allowed to access a node in the structured document." (pg. 186, Section 5.2 "Access Authorization" and Figure 5, wherein access authorizations express the requirement of access for each path of the object)

As per claim 22, Damiani teaches "the value expression is an executable statement indicating who is granted or denied access to the corresponding path associated with the node." (pg. 186, Example 5.1 and Figure 5, wherein the "Sign" column indicates the subjects who are granted or denied access to each path expression associated with an object)

As per claim 23, Damiani teaches " the Access Control mechanism is configured to store each path and the corresponding value expression in a table." (pg. 186, Figure 5, wherein the access authorizations are kept in a table)

As per claim 24, Damiani teaches "a compiler for compiling each value expression prior to storing in the table." (pg. 186, Example 5.1, wherein each access authorization is compiled and collected prior to placement in the table)

As per claim 25, Damiani teaches "the database management system is configured to receive a query from a user, wherein the query requests access to a node in the document," (pg. 192, Example 6.1 lines 1-4, wherein a query from a user is received) "to execute the query," (pg. 192, Example 6.1 lines 6-8, wherein the query is executed) "to evaluate the value expression corresponding to the path associated with the requested node," (pg. 187, section 6.1 "Document Tree Labeling" and Figure 8, wherein the requested object's access authorization is examined and evaluated

compared to the user id) "to display data associated with the requested node if the value expression grants access to the user," (pg. 192, Example 6.1 lines 14-21 and Figure 9(a) and 9(b), wherein the data is displayed showing accessible objects) "and to hide data associated with the requested node if the value expression denies access to the user." (pg. 192, Example 6.1 lines 14-21 and Figure 9(a) and 9(b), wherein the data is displayed hiding the denied objects)

As per claim 26, Damiani teaches "access control evaluation is performed during a run time." (pg. 188, section 6.1"Document Tree Labeling", wherein the authorizations' behavior varies from different requesters at runtime)

As per claim 27, Damiani teaches "a translator for normalizing each of the access control rules into a format comprising a head, a path and a condition, wherein the condition indicates who is granted or denied access to the path," (pg. 186, Example 5.1 and Figure 5, wherein the access authorization includes a subject, a path expression and a sign that indicated the condition) "and for propagating each of the plurality of access control rules through each path such that access to each path is defined by at least one access control rule;" (pg. 183, section 5.1 "Basic Features of the Access Authorizations" paragraph 2, wherein the authorizations can be recursive, propagating through the paths) "and a value expression generator for transforming each of the at least one access control rules associated with each path into a statement indicating who is granted and denied access to the path." (pg. 183, section 5.1 "Basic Features of the Access Authorizations" paragraph 3, wherein the authorizations are indicative of who is granted or denied access, including groups)

As per claim 28, Damiani teaches "the access control rules are syntactically and logically valid." (pg. 180, section 4 "Authorization Objects", wherein the authorizations use a standard language, XPath, for validation)

As per claim 29, Damiani teaches "the structured document is written in Extensible Markup Language." (pg. 176 paragraph 2 and Figures 1-2, wherein documents are in XML format)

As per claim 30, Damiani teaches "A method for providing path-level access control to a structured document in a collection stored in a database, wherein the structured document comprises a plurality of nodes," (see Introduction, pg. 171) "a) providing an access control policy for the collection, wherein the access control policy comprises a plurality of access control rules;" (pg. 183, section 5.1 "Basic Features of the Access Authorizations", wherein access authorization rules determine whether a user has access to objects) "b) generating a path for each node of the plurality of nodes in the document;" (pg. 174, Example 2.1 and Figure 1(a), wherein the DTD of an XML document shows path information) "c) generating for each path associated with a node a corresponding value expression based on at least one access control rule of the plurality of access control rules, wherein the value expression is an executable statement indicating who is granted or denied access to the corresponding path associated with the node;" (pg. 186, Section 5.2 "Access Authorization" and Figure 5, wherein access authorizations express the requirement of access for each path of the object) "and (d) storing each path and the corresponding value expression in a table;"

(pg. 186, Figure 5, wherein the access authorizations are kept in a table) "wherein the corresponding value expression is utilized during access control evaluation to determine whether a user is allowed to access a node in the structured document." (pg. 186, Example 5.1 and Figure 5, wherein the "Sign" column indicates the subjects who are granted access to each path expression associated with an object)

As per claim 31, Damiani teaches "(e) receiving a query from a user, wherein the query requests access to a node in the document;" (pg. 192, Example 6.1 lines 1-4, wherein a query from a user is received) "(f) executing the query;" (pg. 192, Example 6.1 lines 6-8, wherein the query is executed) "(g) evaluating the value expression corresponding to the path associated with the requested node during a run time;" (pg. 187, section 6.1 "Document Tree Labeling" and Figure 8, wherein the requested object's access authorization is examined and evaluated compared to the user id) "(h) displaying data associated with the requested node if the value expression grants access to the user;" (pg. 192, Example 6.1 lines 14-21 and Figure 9(a) and 9(b), wherein the data is displayed showing accessible objects) "and (i) hiding data associated with the requested node if the value expression denies access to the user." (pg. 192, Example 6.1 lines 14-21 and Figure 9(a) and 9(b), wherein the data is displayed hiding denied objects)

As per claim 32, Damiani teaches "generating step (c) further comprises: (c1) normalizing each of the access control rules into a format comprising a head, a path and a condition, wherein the condition indicates who is granted or denied access to the path and under what circumstances;" (pg. 186, Example 5.1 and Figure 5, wherein the

access authorization includes a subject, a path expression and a sign that indicated the condition) "(c2) propagating each of the plurality of access control rules through each path such that access to each path is defined by at least one access control rule;" (pg. 183, section 5.1 "Basic Features of the Access Authorizations" paragraph 2, wherein the authorizations can be recursive, propagating through the paths) "and (c3) transforming each of the at least one access control rules affecting each path into a statement indicating who is granted and denied access to the path." (pg. 183, section 5.1 "Basic Features of the Access Authorizations" paragraph 3, wherein the authorizations are indicative of who is granted or denied access, including groups)

As per claim 33, Damiani teaches "A computer readable medium containing programming instructions for providing path-level access control to a structured document in a collection stored in a database, wherein the structured document comprises a plurality of nodes," (see Introduction, pg. 171). For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 30 above.

As per claims 34-35, these claims teach the limitations covering the same grounds as rejected claims 31-32, as discussed above, and are similarly rejected.

As per claim 36, Damiani teaches "A method for providing path-level access control to a structured document in a collection stored in a database, wherein the structured document comprises a plurality of nodes," (see Introduction, pg. 171) "a)

providing an access control policy for the collection, wherein the access control policy comprises a plurality of access control rules;" (pg. 183, section 5.1 "Basic Features of the Access Authorizations", wherein access authorization rules determine whether a user has access to objects) "b) generating a path for each node of the plurality of nodes in the document;" (pg. 174, Example 2.1 and Figure 1(a), wherein the DTD of an XML document shows path information) "c) generating for each path associated with a node a corresponding value expression based on at least one access control rule of the plurality of access control rules," (pg. 186, Section 5.2 "Access Authorization" and Figure 5, wherein access authorizations express the requirement of access for each path of the object) "wherein the generating step comprising: (c1) normalizing each of the access control rules into a format comprising a head, a path and a condition, wherein the condition indicates who is granted or denied access to the path and under what circumstances;" (pg. 186, Example 5.1 and Figure 5, wherein the access authorization includes a subject, a path expression and a sign that indicated the condition) "(c2) propagating each of the plurality of access control rules through each path such that access to each path is defined by at least one access control rule;" (pg. 183, section 5.1 "Basic Features of the Access Authorizations" paragraph 2, wherein the authorizations can be recursive, propagating through the paths) "and (c3) transforming each of the at least one access control rules affecting each path into a statement indicating who is granted and denied access to the path;" (pg. 183, section 5.1 "Basic Features of the Access Authorizations" paragraph 3, wherein the authorizations are indicative of who is granted or denied access, including groups) "and (d) storing each

path and the corresponding value expression in a table; wherein the corresponding value expression is utilized during access control evaluation to determine whether a user is allowed to access a node in the structured document." (pg. 186, Example 5.1 and Figure 5, wherein the "Sign" column indicates the subjects who are granted or denied access to each path expression associated with an object)

As per claim 37, Damiani teaches "A computer readable medium containing programming instructions for providing path-level access control to a structured document in a collection stored in a database, wherein the structured document comprises a plurality of nodes" (see Introduction, pg. 171). For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 36 above.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bapat et al. (US Patent 6,236,996 B1)

Glasser et al. (US Patent 6,308,173 B1)

Lei et al. (US Patent 6,631,371 B1)

Cook et al. (US Patent 6,820,082 B1)

Moses (US Patent 7,031,962 B2)

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dangelino N. Gortayo whose telephone number is (571)272-7204. The examiner can normally be reached on M-F 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim T. Vo can be reached on (571)272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dangelino N. Gortayo
Examiner

Tim T. Vo
SPE